CLAIMS

We claim:

1. A method for heating fluid comprising:

carrying fluid to be heated through a vessel wherein

said vessel is made from perfluoroalkoxy or polytetraflouroethylene;

said vessel is coiled around a radiant energy source; and

said vessel and said radiant energy source are enclosed in a chamber;

heating said fluid with the energy radiating from said radiant energy source;

monitoring the temperature of said fluid at the outlet of said vessel with at least one temperature sensing device; and

adjusting the flow of said fluid through said vessel or adjusting the energy emitted by said radiant energy source in response to changes in the temperature recorded during said monitoring.

2. The method of Claim 1 wherein the inside surface of said chamber reflects radiant energy into said fluid.

3. The method of Claim 1 wherein said vessel has a substantially round cross section.

4. The method of Claim 1 further including a temperature sensor at said outlet of said vessel for monitoring a malfunction of said radiant energy source.

5. The method of Claim 1 wherein additional radiant energy sources are located adjacent to said radiant energy source on the inside of said coiled vessel.

6. A heater for heating fluid comprising:

at least one radiant energy source;

a vessel for carrying a fluid to be heated wherein the vessel is made from perfluoroalkoxy or polytetraflouroethylene and said vessel is coiled around said radiant energy source;

a chamber surrounding said vessel and said radiant energy source;

at least one device for monitoring the temperature of said fluid at the outlet end of said vessel; and

at least one control device for adjusting the radiation emitted from said radiant energy source in response to changes in the temperature recorded by said device for monitoring the temperature of said fluid.

7. The heater of Claim 6 wherein the inside surface of said chamber reflects radiant energy into said fluid.

8. The method of Claim 6 wherein at least one of said control devices at said outlet monitors for a malfunction of said radiant energy source.

9. A heater for heating a liquid comprising:

a chamber;

a vessel within said chamber for carrying a fluid to be heated, wherein said vessel is made from perfluoroalkoxy or polytetraflouroethylene and wherein said vessel has an inlet end and an outlet end;

at least one radiant energy source within said chamber wherein said vessel is wound around said at least one radiant energy source in a heat exchange relationship with said at least one radiant energy source; and

a device for sensing the temperature of said fluid at said outlet end of said vessel and adjusting the intensity of said at least one radiant energy source in response to fluctuations in the temperature of said fluid.

10. A heater for heating a liquid comprising:

means for supplying radiant energy;

means for carrying a fluid to be heated wherein said means for carrying a fluid to be heated is wound around said means for supplying radiant energy;

means for enclosing said means for supplying radiant energy and said means for carrying a fluid to be heated;

means for sensing the temperature of said fluid to be heated wherein the intensity of said means for supplying radiant energy is adjusted in response to the temperature detected at the outlet of said means for carrying a fluid to be heated.